

What is Claimed:

1. A method for extending an Item, said Item constituting a discrete storable unit of information that can be manipulated by a hardware/software interface system, said method comprising the utilization of a strongly typed instance (an "Extension") to extend said Item, said Extension constituting a discrete storable unit of information that can be manipulated by said hardware/software interface system.
2. The method of claim 1 wherein said Extension is attached to said Item.
3. The method of claim 1 wherein said Extension cannot exist independently from said Item, such that if said Item ceases to exist, said Extension also ceases to exist.
4. The method of claim 1 wherein said Item is extended by a plurality of Extensions.
5. The method of claim 4 wherein said plurality of Extensions is used to model overlapping type instances.
6. A method for extending a Property, said Property constituting a complex property type that can be manipulated by a hardware/software interface system, said method comprising the utilization of a strongly typed instance (an "Extension") to extend said Property, said extension constituting a discrete storable unit of information that can be manipulated by said hardware/software interface system and which is associated with said Property.
7. The method of claim 6 wherein said Extension is attached to said Property.
8. The method of claim 6 wherein said Extension cannot exist independently from said Property, such that if said Property ceases to exist, said Extension also ceases to exist.

9. The method of claim 6 wherein said Property is extended by a plurality of Extensions.
10. The method of claim 9 wherein said plurality of Extensions is used to model overlapping type instances.
11. A method for a hardware/software interface system to organize and efficiently query a plurality of Items, said Item constituting discretely storable units of information that can be manipulated by a hardware/software interface system, said plurality of Items comprising a first Relationship that relates a first Item and a second Item, said method comprising, for the instantiation of a third Item, said third Item being a subtyped instance of said first Item, said third Item automatically inherits from said first Item a Relationship with said second Item.
12. The method of claim 11 wherein, for the instantiation of a fourth Item, said fourth Item being a subtyped instance of said second Item, said fourth Item automatically inherits from said second Item a Relationship with said first Item.
13. The method of claim 12 wherein said fourth Item further automatically inherits from said second Item a Relationship with said third Item.
14. The method of claim 11 wherein, for each of a first plurality of subtyped instances of said first Item, each of said first plurality of subtyped instances automatically inherits from said first Item a Relationship with said second Item.
15. The method of claim 14 wherein, for each of a second plurality of subtyped instances of said second Item, said second plurality of subtyped instances further automatically inherit from said second Item Relationships with said first Item.
16. The method of claim 15 wherein each of said first plurality of subtyped instances automatically inherits from said first Item a Relationship to each of said second plurality of subtyped instances.

17. The method of claim 16 wherein each of said second plurality of subtyped instances automatically inherits from said second Item a Relationship to each of said first plurality of subtyped instances.

18. A hardware/software interface system for manipulating a plurality of Items, wherein an Item constitutes a discrete storable unit of information that can be manipulated by said hardware/software interface system, said system comprising a subsystem for extending an Item with a strongly typed instance (an "Extension"), said Extension constituting a discrete storable unit of information that can be manipulated by said hardware/software interface system.

19. The system of claim 18 wherein said Extension is attached to said Item.

20. The system of claim 18 wherein said Extension cannot exist independently from said Item, such that if said Item ceases to exist, said Extension also ceases to exist.

21. The system of claim 18 wherein said Item is extended by a plurality of Extensions.

22. A hardware/software interface system for manipulating a plurality of Properties, said Properties constituting complex property types that can be manipulated by a hardware/software interface system, said system comprising a subsystem for extending an Property with a strongly typed instance (an "Extension"), said Extension constituting a discrete storable unit of information that can be manipulated by said hardware/software interface system.

23. The system of claim 22 wherein said Extension is attached to said Property.

24. The system of claim 22 wherein said Extension cannot exist independently from said Property, such that if said Property ceases to exist, said Extension also ceases to exist.

25. The system of claim 22 wherein said Property is extended by a plurality of Extensions.

26. A hardware/software interface system for manipulating a plurality of Items, wherein an Item constitutes a discrete storable unit of information that can be manipulated by said hardware/software interface system, said system comprising a subsystem for organizing and efficiently querying said plurality of Items, said plurality of Items comprising a first Relationship that relates a first Item and a second Item, wherein said subsystem:

for the instantiation of a third Item, said third Item being a subtyped instance of said first Item, automatically establishes an relationship between said third Item and said second Item;

for the instantiation of a fourth Item, said fourth Item being a subtyped instance of said second Item, automatically establishes an relationship between said fourth Item and said first Item; and

automatically establishes an relationship between said fourth Item and said first Item.

27. The system of claim 26 wherein, for each of a first plurality of subtyped instances of said first Item, and for each of a second plurality of subtyped instances of said second Item, said subsystem:

automatically establishes a relationship for each of said first plurality of subtyped instances with said second Item;

automatically establishes a relationship for each of said second plurality of subtyped instances with said first Item; and

automatically establishes a relationship for each of said first plurality of subtyped instances with each of said second plurality of subtyped instances.

28. A hardware/software interface system for manipulating a plurality of Items, wherein an Item constitutes a discrete storable unit of information that can be manipulated by said hardware/software interface system, said system comprising a subsystem for extending an Item with a strongly typed instance (an "Extension"), said Extension constituting a discrete storable unit of information that can be manipulated by said hardware/software interface system.

29. The system of claim 28 wherein said Extension is attached to said Item.

30. The system of claim 28 wherein said Extension cannot exist independently from said Item, such that if said Item ceases to exist, said Extension also ceases to exist.

31. The system of claim 28 wherein said Item is extended by a plurality of Extensions.

32. A hardware/software interface system for manipulating a plurality of Properties, said Properties constituting complex property types that can be manipulated by a hardware/software interface system, said system comprising a subsystem for extending an Property with a strongly typed instance (an "Extension"), said Extension constituting a discrete storable unit of information that can be manipulated by said hardware/software interface system.

33. The system of claim 32 wherein said Extension is attached to said Property.

34. The system of claim 32 wherein said Extension cannot exist independently from said Property, such that if said Property ceases to exist, said Extension also ceases to exist.

35. The system of claim 32 wherein said Property is extended by a plurality of Extensions.

36. A hardware/software interface system for manipulating a plurality of Items, wherein an Item constitutes a discrete storable unit of information that can be manipulated by said hardware/software interface system, said system comprising a subsystem for organizing and efficiently querying said plurality of Items, said plurality of Items comprising a first Relationship that relates a first Item and a second Item, wherein said subsystem:

for the instantiation of a third Item, said third Item being a subtyped instance of said first Item, automatically establishes an relationship between said third Item and said second Item;

for the instantiation of a fourth Item, said fourth Item being a subtyped instance of said second Item, automatically establishes an relationship between said fourth Item and said first Item; and

automatically establishes an relationship between said fourth Item and said first Item.

37. The system of claim 36 wherein, for each of a first plurality of subtyped instances of said first Item, and for each of a second plurality of subtyped instances of said second Item, said subsystem:

automatically establishes a relationship for each of said first plurality of subtyped instances with said second Item;

automatically establishes a relationship for each of said second plurality of subtyped instances with said first Item; and

automatically establishes a relationship for each of said first plurality of subtyped instances with each of said second plurality of subtyped instances.

38. A computer-readable medium comprising computer-readable instructions for extending an Item, said Item constituting a discrete storable unit of information that can be manipulated by a hardware/software interface system, said computer-readable instructions comprising instructions for the utilization of a strongly typed instance (an "Extension") to extend said Item, said Extension constituting a discrete storable unit of information that can be manipulated by said hardware/software interface system wherein said Extension is attached to said Item and wherein said Extension also ceases to exist when said Item ceases to exist.

39. A computer-readable medium comprising computer-readable instructions for extending an Property, said Property constituting a complex property type that can be manipulated by a hardware/software interface system, said computer-readable instructions comprising instructions for the utilization of a strongly typed instance (an "Extension") to extend said Property, said Extension constituting a discrete storable unit of information that can be manipulated by said hardware/software interface system wherein said Extension is attached to said Property and wherein said Extension also ceases to exist when said Property ceases to exist.

40. A computer-readable medium comprising computer-readable instructions for organizing and efficiently querying a plurality of Items, said Item constituting discretely storable units of

information that can be manipulated by a hardware/software interface system, said computer-readable instructions comprising instructions for:

instantiating a first Item, a second Item, and a first Relationship that relates a first Item and a second Item;

instantiating a third Item, said third Item being a subtyped instance of said first Item; and
automatically establishing an inherited Relationship between said third Item and said second Item.

41. The computer-readable instructions of claim 40 further comprising instructions for:

instantiating a fourth Item, said fourth Item being a subtyped instance of said second Item; and

automatically establishing an inherited Relationship between said fourth Item and said first Item.

42. The computer-readable instructions of claim 41 further comprising instructions for automatically establishing an inherited Relationship between said third Item and said fourth Item.